



SUBJECT: **TARGETED TEMPERATURE  
MANAGEMENT GUIDELINE**

REFERENCE NO. 320.1

AUTHORITY: California Code of Regulations, Title 22, Division 9, Chapter 7.1

PRINCIPLES:

1. Targeted temperature management (TTM) preserves cerebral function in patients resuscitated after cardiac arrest. This occurs through decreasing cellular metabolism and oxygen demand, reducing production of excitatory neurotransmitters, minimizing disruption of ion homeostasis, and reducing free radicals.
2. Previously referred to as “therapeutic hypothermia”, the term TTM has been adopted to refer to induced hypothermia as well as strict temperature control at a target core temperature between 32 and 36 degrees Celsius for at least 24 hours.
3. Current guidelines recommend that comatose adult patients with return of spontaneous circulation (ROSC) after cardiac arrest have TTM for both shockable and non-shockable rhythms.
4. While there is no data demonstrating a benefit of TTM in children, adolescents with sudden ventricular fibrillation (VF) or pulseless ventricular tachycardia (pVT) with ROSC may benefit from TTM.
5. Initiating hypothermia in prehospital setting has **not** improved survival or neurologic outcomes. Currently there is no role for prehospital cooling.
6. Fever in the post-cardiac arrest patient is associated with poor outcome.
7. TTM is the only intervention demonstrated to improve neurological recovery after cardiac arrest. TTM should not affect the decision to perform percutaneous coronary intervention (PCI). Concurrent PCI and hypothermia are reported to be feasibly safe.

GUIDELINES:

1. Fever should be avoided in all comatose post-cardiac arrest patients.
2. All comatose adult (greater than 14 years of age) patients with ROSC after cardiac arrest should receive TTM.
3. Consider TTM in adolescents with sudden VF or pVT with ROSC.

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4. There are no absolute contraindications for TTM; however, it is reasonable to avoid targets below 36 degrees Celsius in the following scenarios:
  - a. Pregnancy
  - b. Known intrinsic bleeding diathesis (e.g. hemophilia or Von Willebrand)
  - c. Acute intracranial bleeding
  - d. Suspected or confirmed acute stroke
  - e. Known wishes for limitations in resuscitation and/or a Do Not Resuscitate-order
  - f. Known comorbid disease making 180 days survival unlikely
  - g. Preceding poor neurologic function (Pre-arrest Cerebral Performance Category of 3 or 4)
  - h. Delays longer than 6 hours from ROSC to cooling
  - i. Systolic blood pressure <80 mm Hg despite fluid resuscitation, vasopressor(s) and possibly including inotropic medication and/or intra-aortic balloon pump
  - j. Temperature on admission <30°C.
5. A temperature between 32°C and 36°C should be selected and maintained for **at least 24 hours** once target temperature is achieved. Core temperature should be monitored. Axillary or oral temperatures are inadequate for measurement of core temperature.
6. TTM may be achieved and maintained using:
  - a. Intravenous Normal Saline 4°C
  - b. Ice packs (axillae, groin, neck)
  - c. Cooling blankets
  - d. Cooling vests
  - e. Intravascular devices

#### CROSS REFERENCE

2015 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care